

WHAT IS CLAIMED IS:

1. A multi-beam light source unit comprising:
  - a laser diode unit for discharging a plurality of laser beams;
  - a rotational member for supporting the diode unit and rotating to a substantially aligned position between a plurality of the laser beams;
  - a fixing member for supporting the rotational member in a rotatable manner;
  - a temporary joining part for maintaining joining status between the rotational member and the fixing member in such a way that the rotational member rotates but cannot easily rotate when the rotational member is rotated for position alignment between the plurality of the laser beams; and
  - a fixing part for fixing the rotated rotational member to the fixing member.
2. The unit according to claim 1, wherein the temporary joining part comprises:
  - a rotational boss installed in a projecting manner on a central part of the rotational member;
  - a boss cavity formed on the fixing member, for receiving the rotational boss in a rotatable manner; and
  - a plurality of elastic ribs for elastically supporting an outer periphery of the rotational boss at a plurality of positions on an inner periphery of the boss cavity.
3. The unit according to claim 2, wherein the temporary joining part further comprises:
  - a plurality of elastic ribs formed at substantially equal intervals on the inner periphery of the boss cavity; and
  - a plurality of holes for generating an elastic force on the elastic rib are formed, respectively, on an outer periphery of the plurality of elastic ribs.
4. The unit according to claim 3, wherein the plurality of elastic ribs comprises four elastic ribs.
5. The unit according to claim 3, wherein the temporary joining part further comprises:
  - a plurality of contact surface parts formed at a predetermined depth on a portion in the

outer periphery of the rotational boss for contacting the plurality of elastic ribs, and wherein a predetermined interval is maintained between an inner periphery of the boss cavity rib and an outer periphery of the rotational boss, except between the elastic rib and the contact surface part.

5

6. The unit according to claim 1, wherein the laser diode unit comprises:

a multi-beam semiconductor laser diode having at least two laser beam discharging parts; and

an operation circuit board for controlling operation of this laser diode, and wherein the

10 operation circuit board is joined to the rotational member.

7. The unit according to claim 1, wherein the fixing part comprises:

at least one screw for fastening the rotational member to the fixing member, and wherein the rotational member comprises an arc-shaped long slot through which the at least  
15 one screw passes.

8. The unit according to claim 7, wherein the fixing part further comprises a plurality of screws.

20 9. The unit according to claim 8, wherein the plurality of screws comprises two screws.

10. The unit according to claim 2, wherein the fixing member comprises:

a first member comprising the boss cavity; and

25 a second member vertically extended from the first member and having a settle unit and a pair of fixing parts.

11. The unit according to claim 10, further comprising:

30 a collimating lens for converting a plurality of laser beams discharged from the laser

diode unit into a parallel light; and

a lens holder for fixing the collimating lens, and wherein the lens holder is adapted to be settled down on the settle unit of the second member.

12. A multi-beam laser scanning unit comprising:  
a multi-beam light source unit for discharging a plurality of laser beams;  
a scanning/image resulting unit for forming an image on a scanned surface by  
scanning the plurality of laser beams;

5        a frame for supporting the multi-beam light source unit and the scanning/image  
resulting unit, wherein the multi-beam light source unit comprises:  
            a laser diode having at least two laser beam discharging parts;  
            an operation circuit board for controlling operation of the laser diode;  
            a rotational member for supporting the laser diode and the operation circuit  
10     board, and rotating to a substantially aligned position between a plurality of the laser  
beams;  
            a fixing member for supporting the rotational member in a rotatable manner;  
            a temporary joining part for maintaining joining status between the rotational  
member and the fixing member in such a way that the rotational member rotates but  
15     cannot easily rotate when the rotational member is rotated for position alignment  
between the plurality of the laser beams; and  
            a fixing part for fixing the rotated rotational member to the fixing member.

13. The unit according to claim 12, wherein the multi-beam light source unit is fixed  
20     and installed in a bottom wall of the frame.

14. The unit according to claim 13, wherein the scanning/image resulting unit  
comprises:  
25     a polygon mirror for scanning a plurality of laser beams discharged from the multi-  
beam light source unit;  
            an image resulting lens for causing the laser beam scanned by the polygon mirror to  
impinge onto the scanned surface;  
            a cylindrical lens for linearly condensing a plurality of the laser beams on a refection  
surface of the polygon mirror; and  
30     a synchronization signal detecting unit.

15. The unit according to claim 13, wherein the temporary joining part comprises:

a rotational boss installed in a projecting manner on a central part of the rotational member;

a boss cavity formed on the fixing member, for receiving the rotational boss in a rotatable manner; and

5 a plurality of elastic ribs for elastically supporting an outer periphery of the rotational boss at a plurality of positions on an inner periphery of the boss cavity.

16. The unit according to claim 15, wherein the temporary joining part further comprises:

10 a plurality of elastic ribs formed at substantially equal intervals on the inner periphery of the boss cavity; and

a plurality of holes for generating an elastic force on the elastic rib; the holes formed on respective portions of an outer periphery of the plurality of elastic ribs.

15 17. The unit according to claim 16, wherein the plurality of elastic ribs comprises four elastic ribs.

18. The unit according to claim 16, wherein the temporary joining part further comprises:

20 a plurality of contact surface parts formed at a predetermined depth on a portion in the outer periphery of the rotational boss for contacting the plurality of elastic ribs, and wherein a predetermined interval is maintained between an inner periphery of the boss cavity and an outer periphery of the rotational boss except between the elastic rib and the contact surface part.

25 19. The unit according to claim 12, wherein the fixing part comprises:  
at least one screw for fastening the rotational member to the fixing member, and wherein the rotational member has an arc-shaped long slot through which the at least one screw passes.

30 20. The unit according to claim 19, wherein the fixing part further comprises the at least one screw comprising a plurality of screws.

21. The unit according to claim 20, wherein the plurality of screws comprises a pair of screws.

22. The unit according to claim 13, wherein the fixing member comprises:

5 a first member having the boss cavity; and

a second member vertically extended from the first member and having a settle unit and at least one fixing part.

23. The unit according to claim 22, wherein the multi-beam light source unit further comprises:

10 a collimating lens for converting a plurality of laser beams discharged from the laser diode unit into a parallel light; and

a lens holder for fixing the collimating lens, and wherein the lens holder is settled down on the settle unit of the second member.

15 24. The unit according to claim 22, wherein the at least one fixing part comprises a pair of fixing parts.